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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,926	11/06/2003	Xiaomeng Chen	BUR920030123US2	2925

7590 06/05/2006
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EXAMINER

NGUYEN, THANH T

ART UNIT	PAPER NUMBER
2813	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/605,926

Applicant(s)

CHEN ET AL.

Examiner

Thanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 and 35 is/are pending in the application.
- 4a) Of the above claim(s) 5-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 35 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/28/06 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang (U.S. Patent No. 2002/0081855).

Referring to figures 1a-1F, Jiang et al. teaches a method for reducing resist poisoning, comprising:

Forming a first substructure in a dielectric on a substrate (106, via, see figure 1C);

Reducing amine related contaminants (nitrogen source, see paragraphs# 16, 23) from the dielectric (102/104/105) and the substrate (100) prior to a formation of a second structure (108)

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on the substrate (100) such that the amine related contaminates will not diffuse out of either the substrate or the dielectric, wherein the reducing utilizes a plasma treatment (see paragraphs# 13, 16, 21-25), which one of chemically ties up the amine contaminates and binds, traps, or consumes (remove, see paragraph# 23) the amine related contaminates during subsequent processing step;

Forming a second structure (108) on the substrate; and

After the forming of the first structure, preventing poisoning of a resist layer in the subsequent process by the reducing (see paragraph# 25). Noted that the same plasma (O₂) would provide the same result (see paragraph# 27 of the present invention for detail).

Regarding to claim 35, forming the second structure on the substrate is substantially devoid of amine related contaminants (see paragraph#25).

Allowable Subject Matter

Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art alone or in combination teaches the reducing amine by using N₂O plasma treatment chemically binds, tarps or consumes the amine related contaminated during subsequent processing steps.

Response to Arguments

Applicant's arguments filed 3/28/06 have been fully considered but they are not persuasive.

Applicant contends Jiang does not teach reducing amine related contaminants from the dielectric on a substrate prior to the formation of a second structure on the substrate such that the amine related contaminants will not diffuse out of either substrate or dielectric, wherein the reducing utilize a plasma treatment which one of chemically ties up the amine related contaminants and binds, traps or consumes the amine related contaminants during subsequent process steps. In response to applicant that Jiang clearly teaches reducing amine related contaminants (nitrogen source called amine, see paragraphs# 16/23) from the dielectric (102/104/105) on a substrate (100) prior to the formation of a second structure (108) on the substrate (100) such that the amine related contaminants will not diffuse out of either substrate or dielectric, wherein the reducing utilize a plasma treatment which one of chemically ties up the amine related contaminants and binds, traps or consumes the amine related contaminants during subsequent process steps (noted that when plasma treatment with oxygen it will consume the nitrogen contaminant (amine). Since there is no amine left in on the dielectric or the substrate. Hence, the amine would not diffuse out of either substrate or dielectric layer).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (571) 272-1702. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pairedirect.uspto.gov>. Should you have questions on access to thy Private PAIR system, contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



Thanh Nguyen
Patent Examiner
Patent Examining Group 2800

TTN